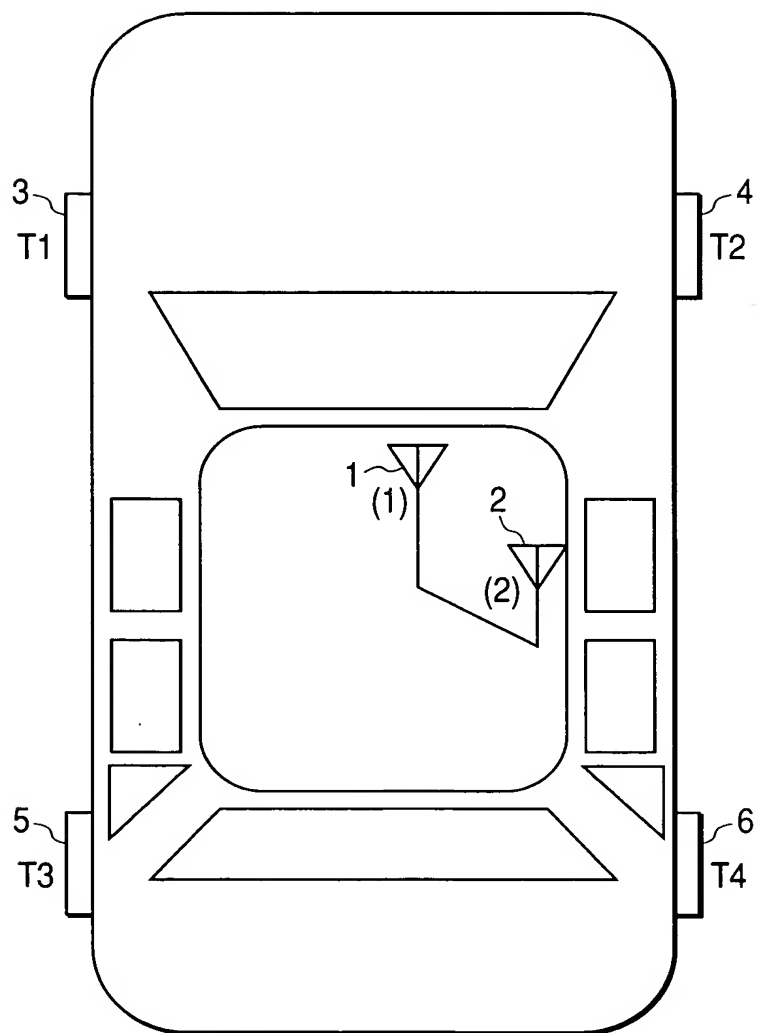


1 / 14

FIG. 1

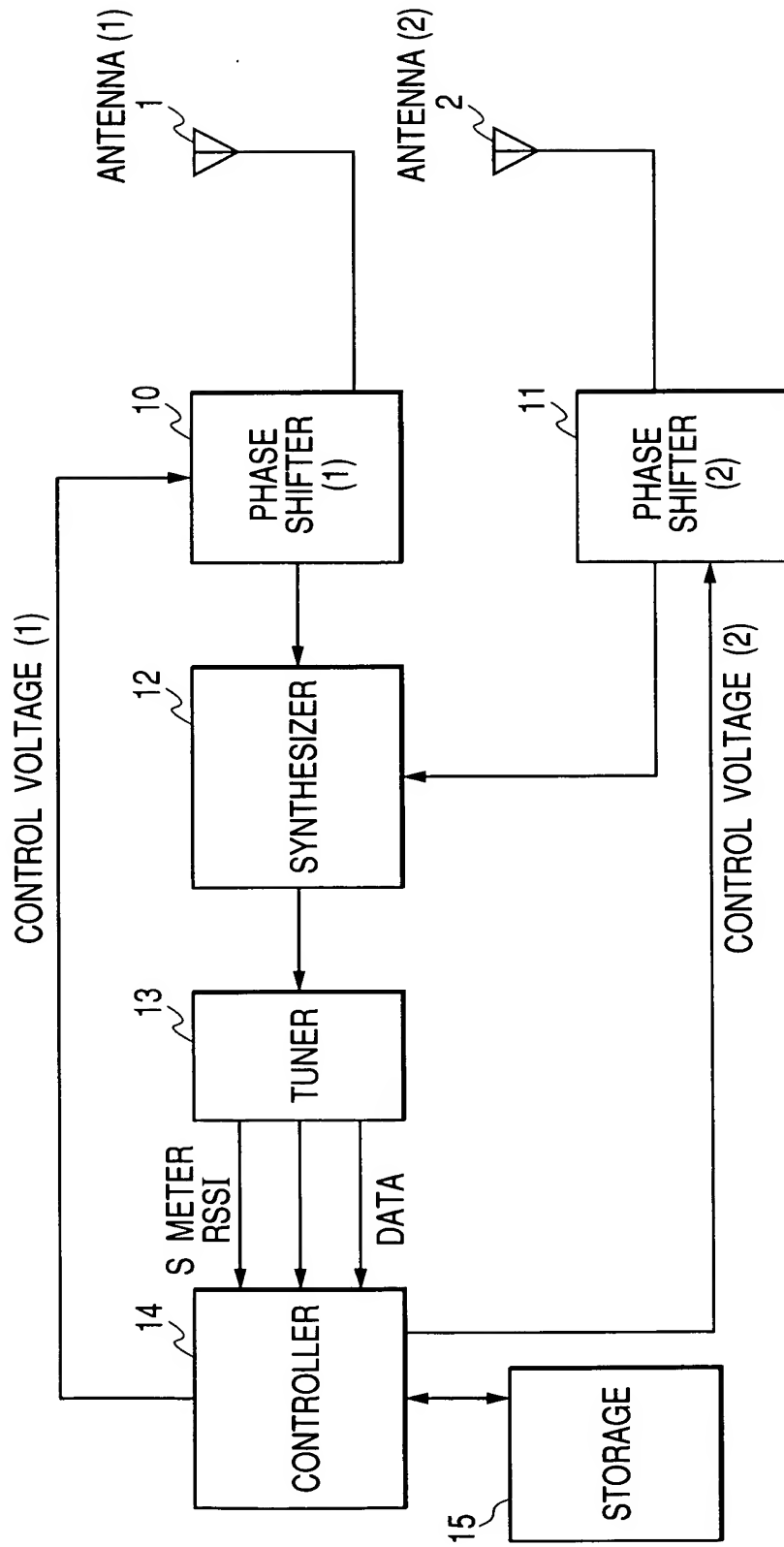
EXAMPLE OF ANTENNA ARRANGEMENT
ON VEHICLE



2 / 14

FIG. 2

BLOCK DIAGRAM



3 / 14

FIG. 3
EXAMPLES OF PHASE SHIFTER

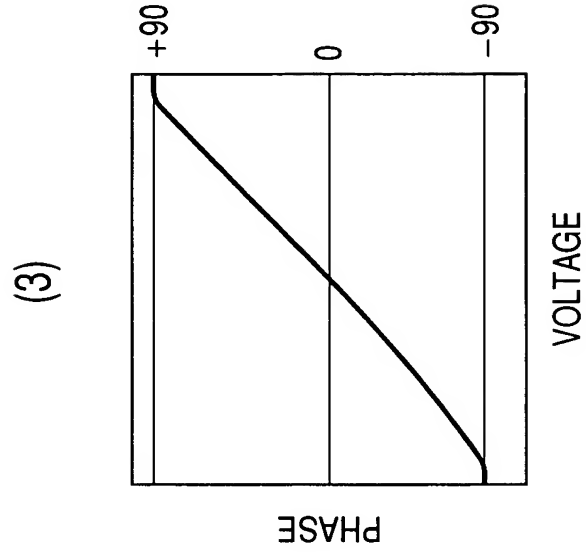
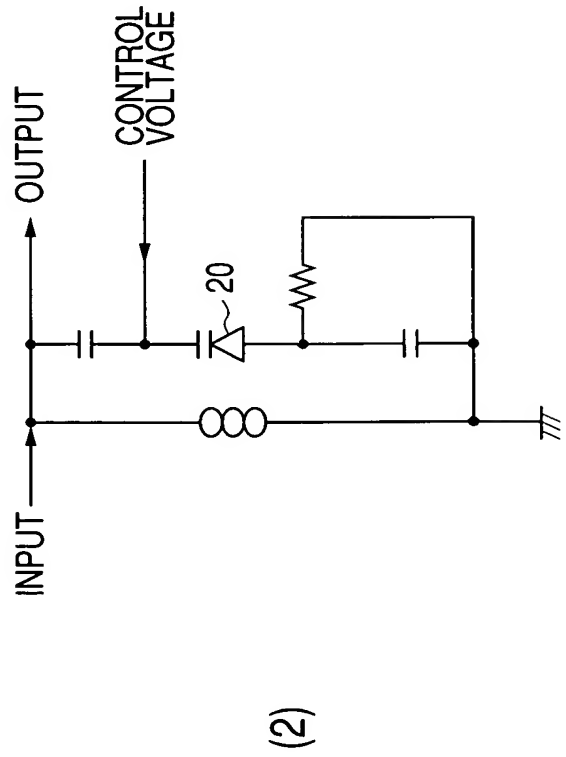
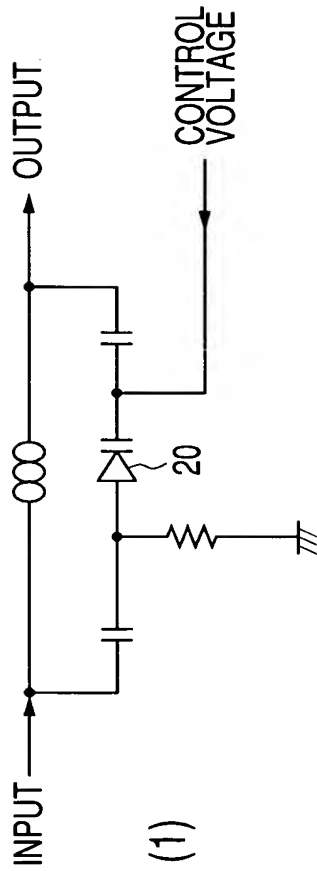


FIG. 4

SIGNAL TRANSMISSION FROM POSITION T1

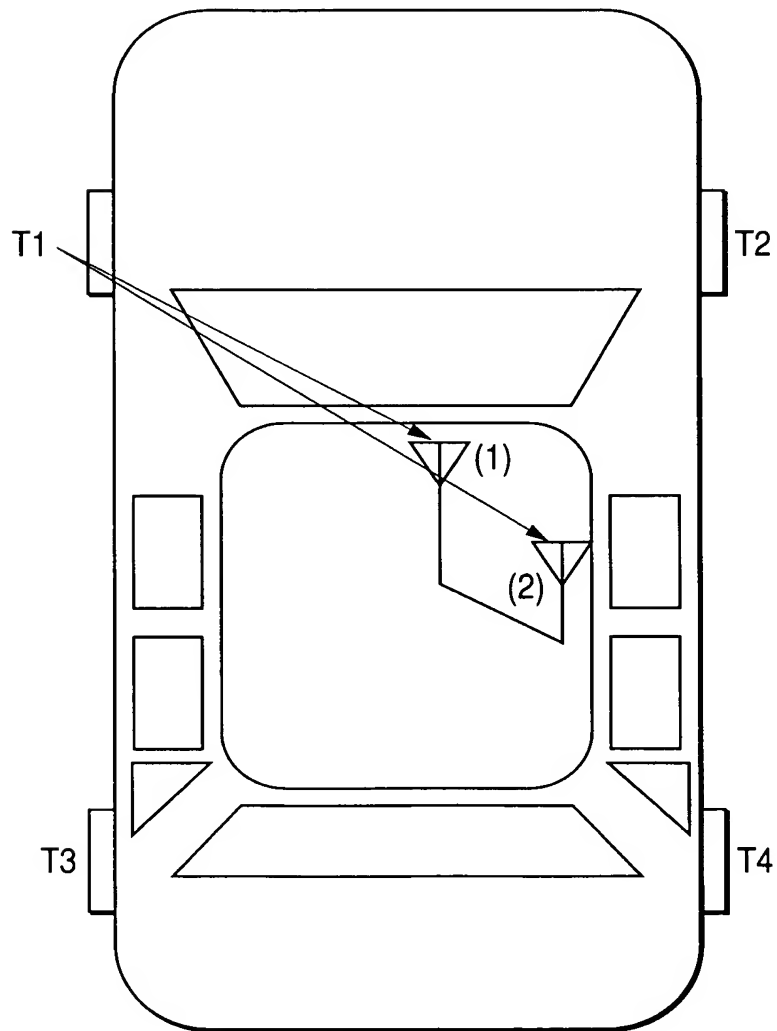
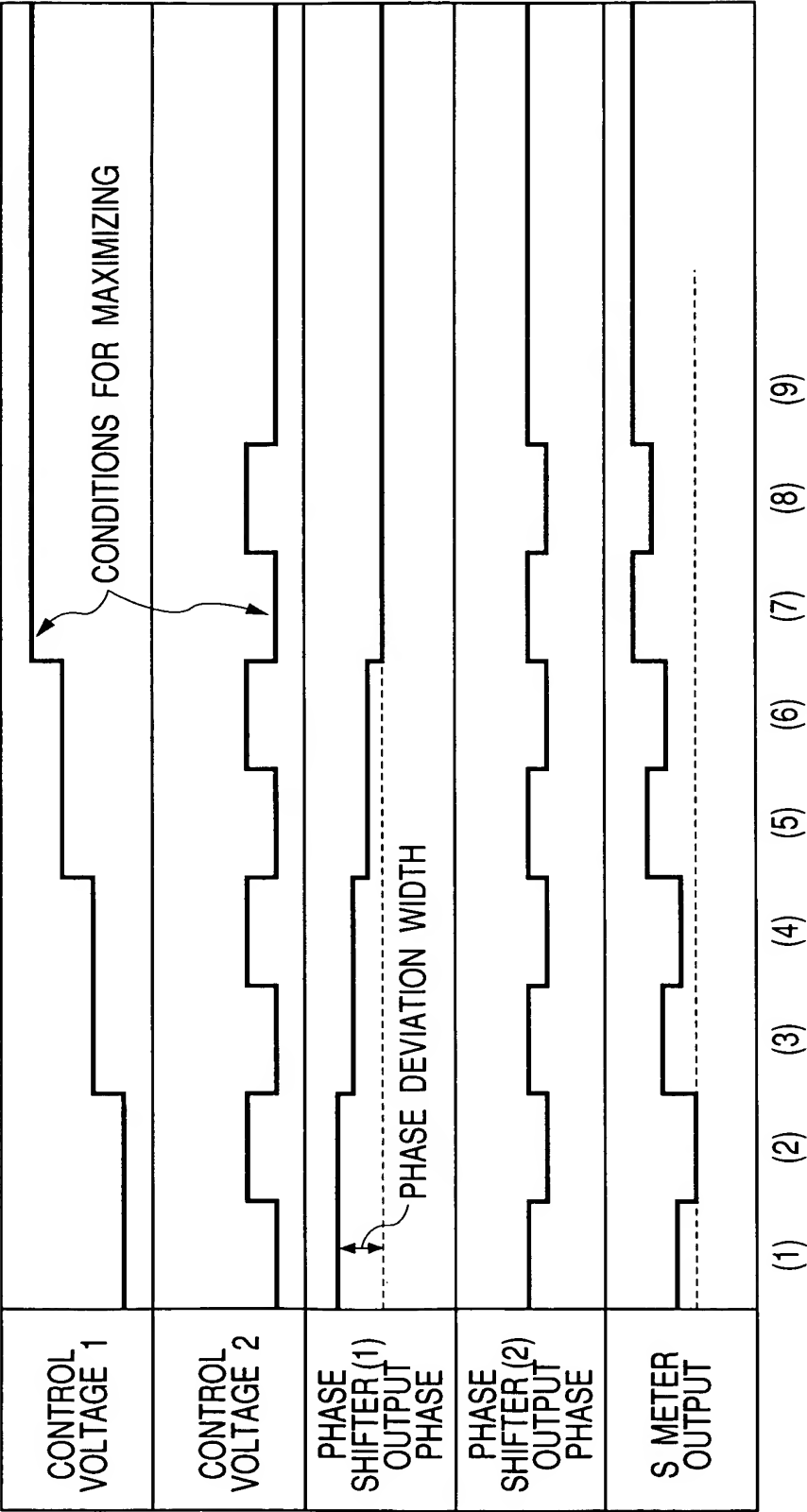


FIG. 5

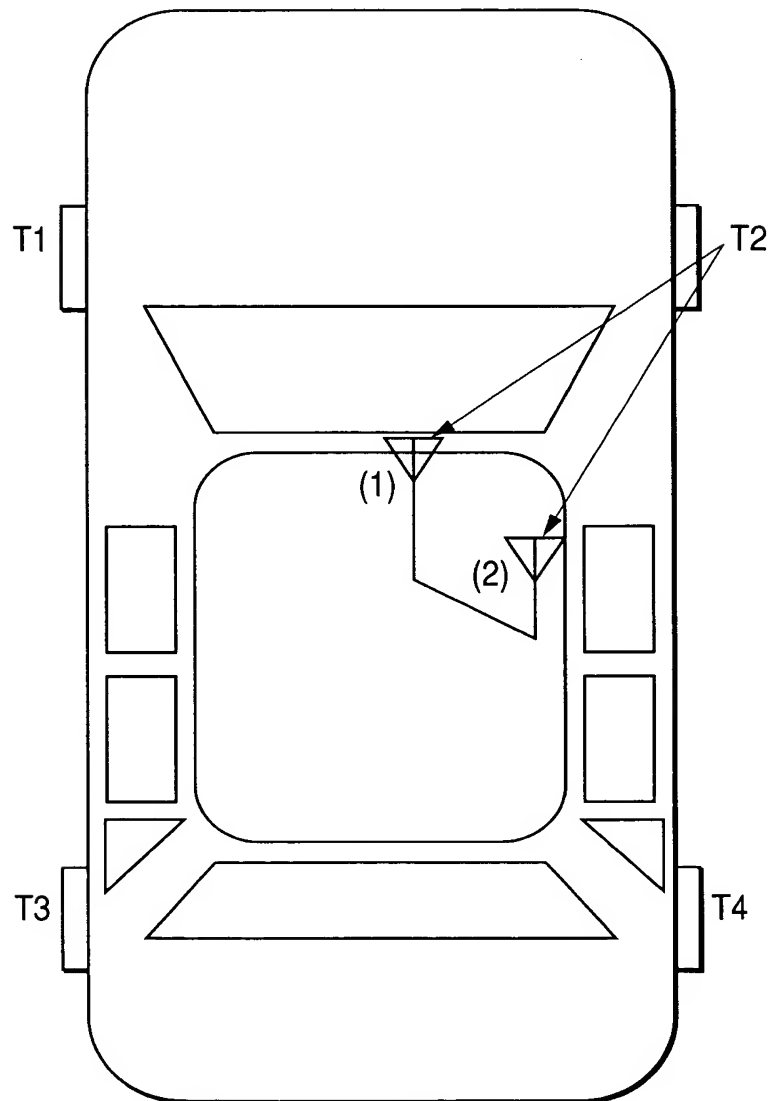


IT IS ASSUMED THAT A DISTANCE BETWEEN THE RECEIVING ANTENNAS (1) AND (2) IS $\lambda / 2 (\text{PHASE (1)} - \text{PHASE (2)} = \text{"+LARGE"})$. INITIALLY, S METER OUTPUT IS SMALL BECAUSE THE PHASE DIFFERENCE IS LARGE. THE CONTROL VOLTAGE IS VARIED AND THE POINT WHERE THE S METER OUTPUT IS MAXIMIZED IS FOUND TO BE THE CASE: THE CONTROL VOLTAGE 1 IS "LARGE" AND THE CONTROL VOLTAGE 2 IS "SMALL". SINCE THIS RESULT ONLY CORRESPONDS TO THE CASE OF SIGNAL TRANSMISSION FROM THE POSITION T1, ACCORDING TO THE ARRANGEMENTS OF ANTENNAS, IT IS POSSIBLE TO DETERMINE THAT THE TRANSMISSION COMES FROM THE POSITION T1.

6 / 14

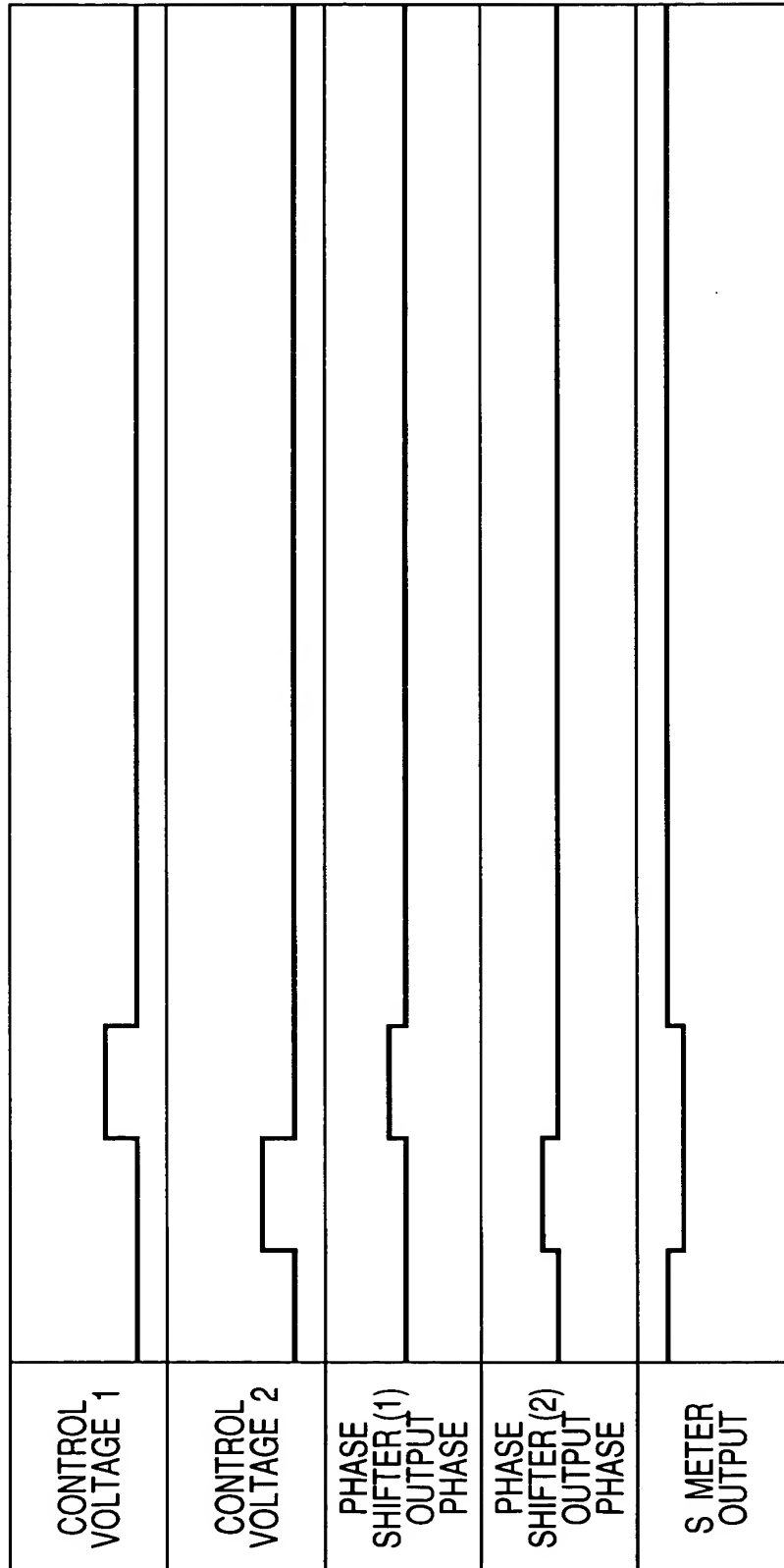
FIG. 6

SIGNAL TRANSMISSION FROM POSITION T2



7 / 14

FIG. 7



IN THIS CASE, THE INPUTS ARE APPROXIMATELY IN PHASE. THEREFORE, IF THE CONTROL VOLTAGES ARE APPROXIMATELY EQUAL (BOTH ARE SMALL IN THE ABOVE DIAGRAM), THE TRANSMISSION IS CONSIDERED TO BE FROM THE POSITION T2.

8 / 14

FIG. 8

SIGNAL TRANSMISSION FROM POSITION T3

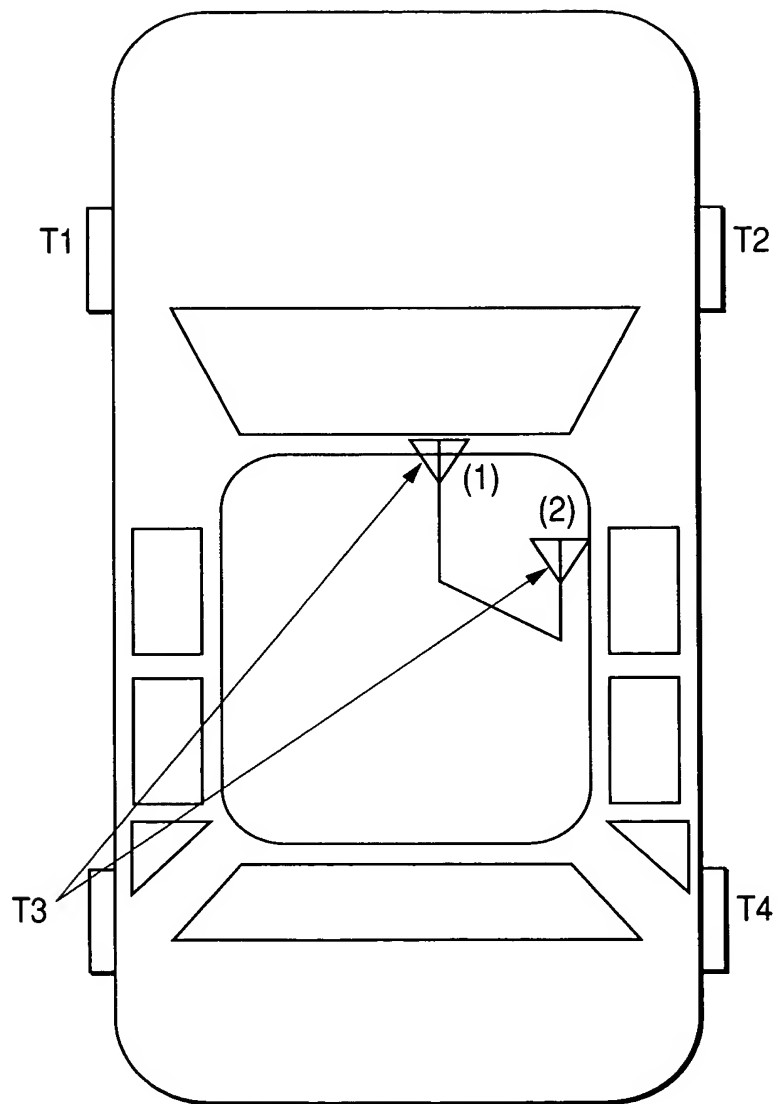
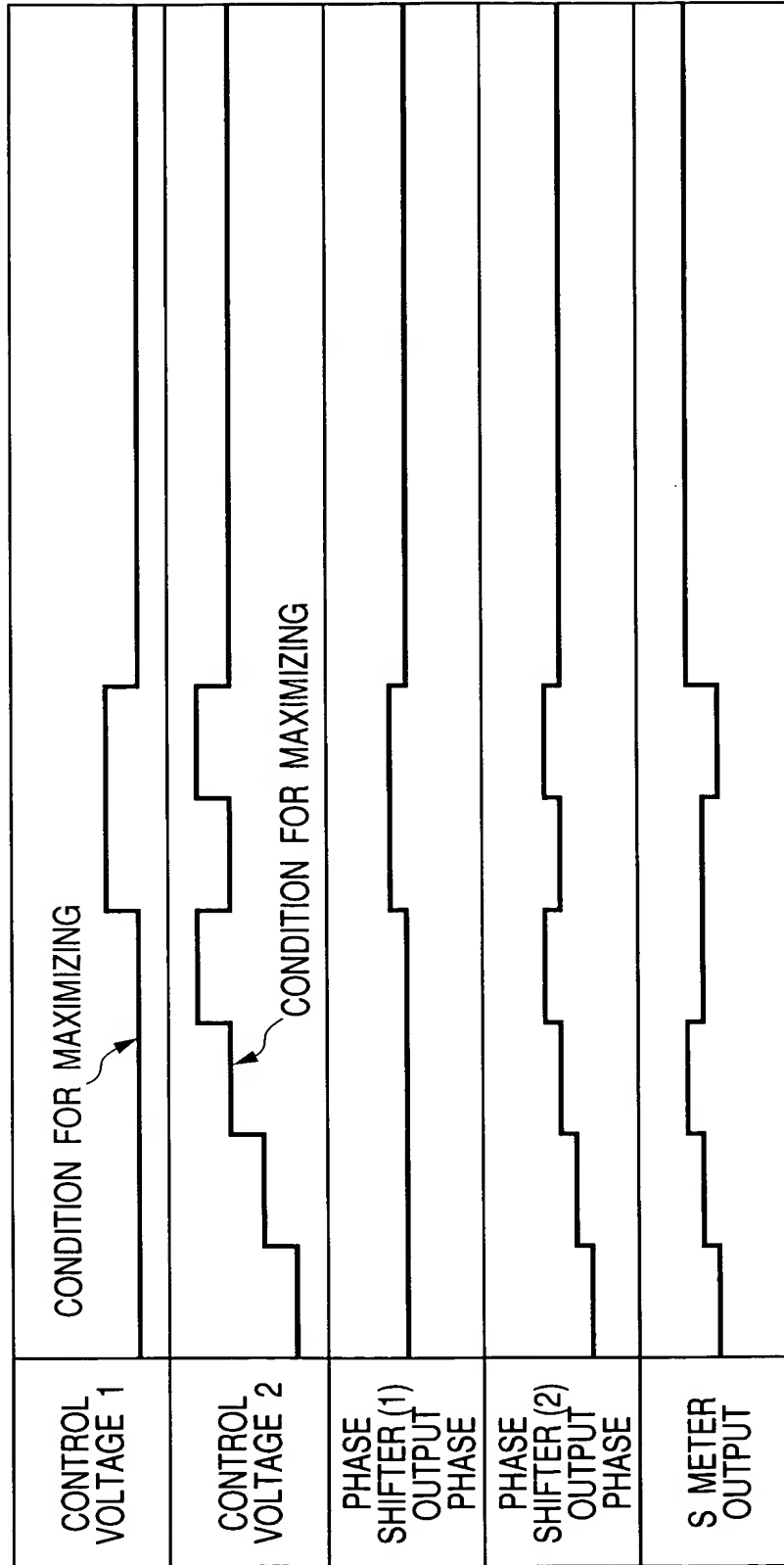


FIG. 9



IN THIS CASE, THE PHASE DIFFERENCE IS PHASE (1) - PHASE (2) = "+MEDIUM". THE CONTROL VOLTAGE FOR MAXIMIZATION: CONTROL VOLTAGE 1 IS "SMALL" AND THE CONTROL VOLTAGE 2 IS "MEDIUM". SINCE THIS RESULT ONLY CORRESPONDS TO THE CASE OF TRANSMISSION FROM THE POSITION T3, IT IS DETERMINED THAT A TRANSMISSION COMES FROM THE POSITION T3.

10 / 14

FIG. 10

SIGNAL TRANSMISSION FROM POSITION T4

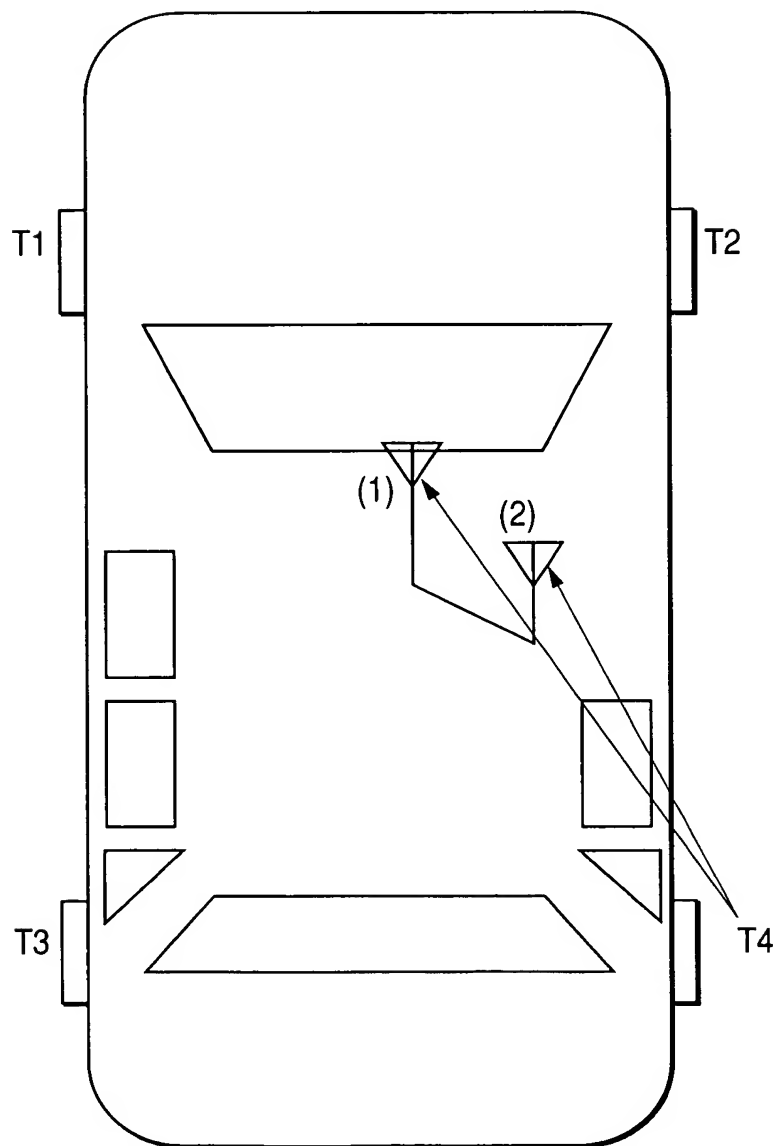
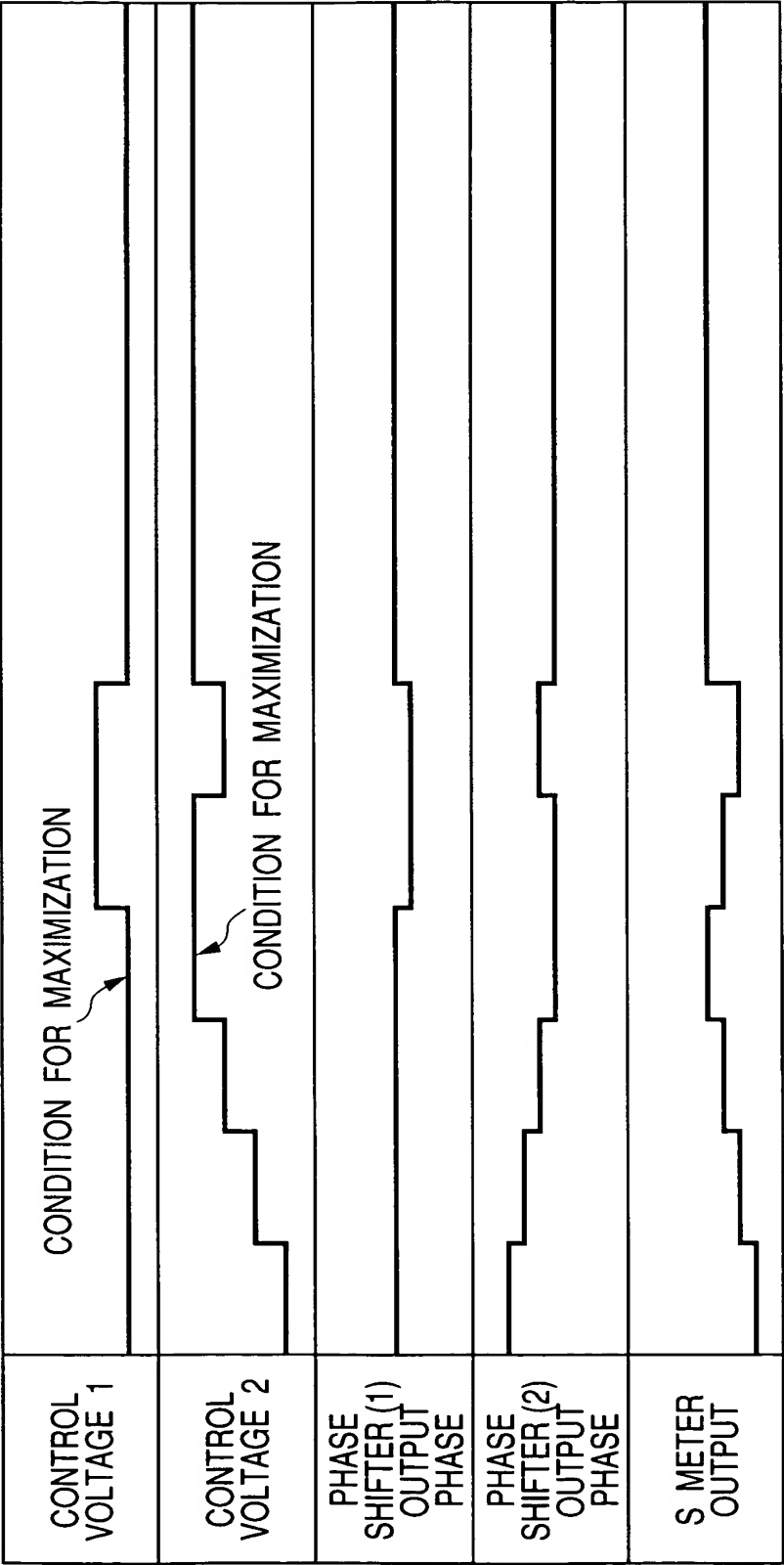


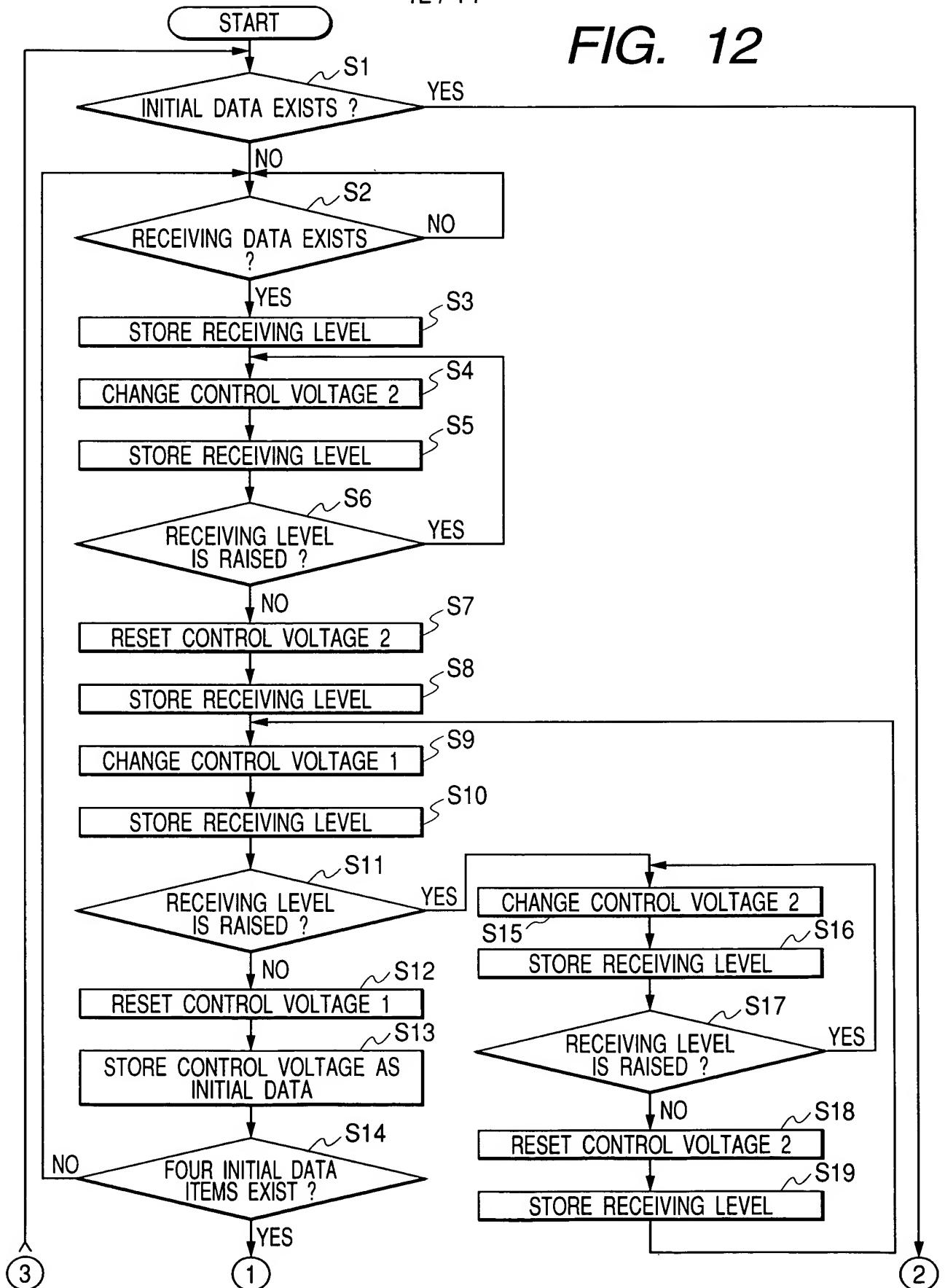
FIG. 11



IT IS ASSUMED THAT A DISTANCE BETWEEN THE RECEIVING ANTENNAS (1) AND (2) IS $\lambda/2$ (PHASE (1) - PHASE (2) = "+LARGE"). INITIALLY, S METER OUTPUT IS SMALL BECAUSE THE PHASE DIFFERENCE IS LARGE. THE CONTROL VOLTAGE IS VARIED AND THE POINT WHERE THE S METER OUTPUT IS MAXIMIZED IS FOUND TO BE THE CASE: THE CONTROL VOLTAGE 1 IS "SMALL" AND THE CONTROL VOLTAGE 2 IS "LARGE". SINCE THIS RESULT ONLY CORRESPONDS TO THE CASE OF TRANSMISSION FROM THE POSITION T4, ACCORDING TO THE ARRANGEMENTS OF ANTENNAS, IT IS POSSIBLE TO DETERMINE THAT THE TRANSMISSION COMES FROM THE POSITION T4.

12 / 14

FIG. 12



13 / 14

FIG. 13

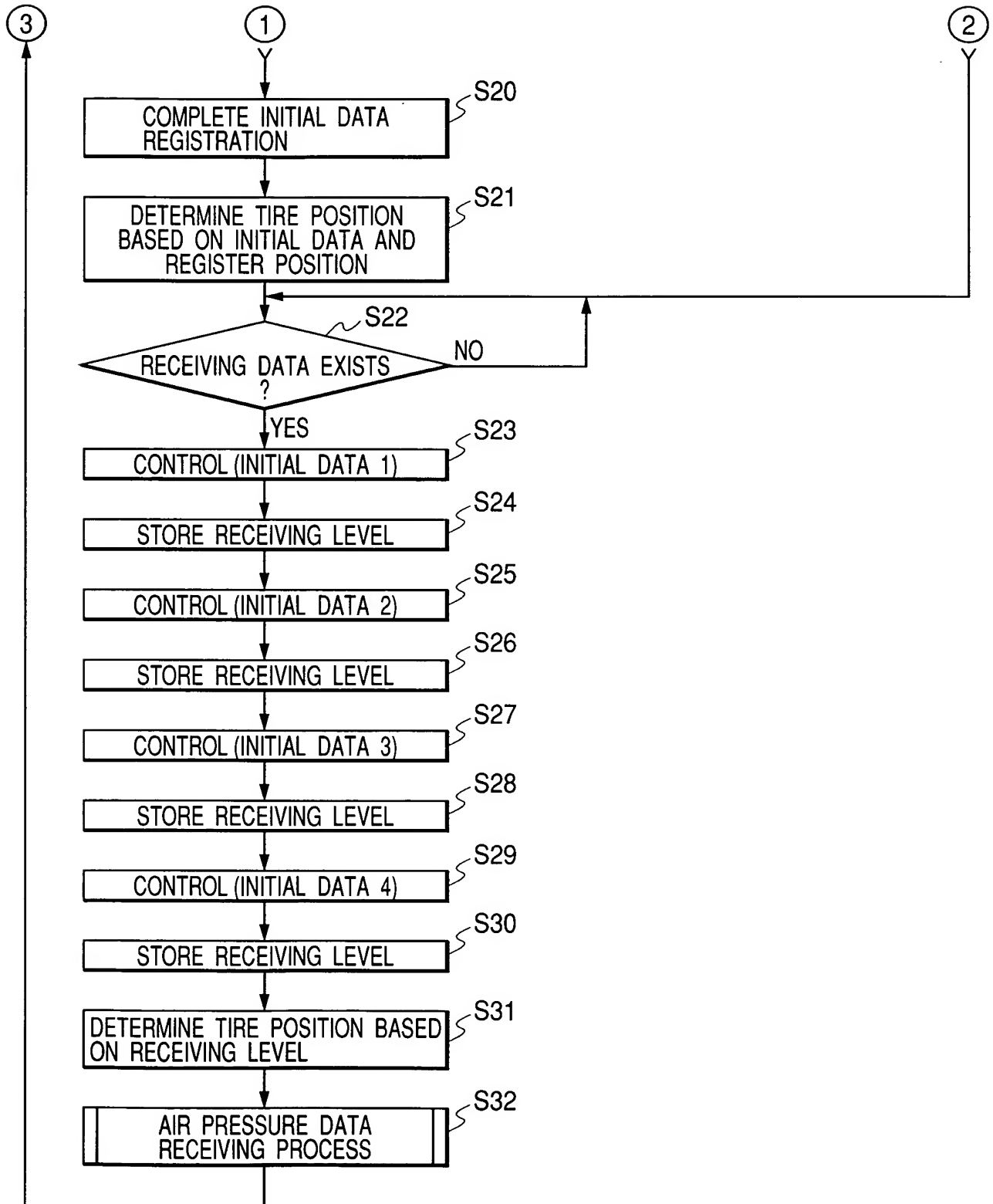


FIG. 14

TIRE MOUNTING POSITION	PHASE DIFFERENCE (1)–(2)	CONTROL VOLTAGE 1	CONTROL VOLTAGE 2
T1	+ LARGE	+ LARGE	SMALL
T2	SMALL	SMALL	SMALL
T3	+ MEDIUM	SMALL	+ MEDIUM
T4	– LARGE	SMALL	+ LARGE